

# Mortgage Lenders' Market Response to a Landmark Regulatory Decision Based on Fair Lending Compliance

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**Abstract.** Regulation of real estate lending has substantially increased in the past decade. Government efforts to improve compliance with Community Reinvestment Act mandates are evidence of increased emphasis on racial equal opportunity in loan origination. To investigate the impact of these efforts, this paper examines the Federal Reserve Bank rejection of Shawmut National Corporation's application to buy New Dartmouth Bank. Rejection was based on Shawmut's poor compliance with fair-lending guidelines. Testing finds significant negative abnormal stock returns for samples of mortgage lenders on the announcement day of Shawmut's application rejection. In addition, cross-sectional analysis reveals an inverse relationship between national banks' cumulative abnormal returns (CARs) and a measure of fair lending.

## Introduction

A series of federal government mandates requires residential mortgage lenders to provide equal services to those ethnic and racial minority groups residing within their service areas.<sup>1</sup> As enforcement of these requirements became increasingly aggressive, interest in unlawful loan discrimination issues rose. Of particular interest to this paper is the Community Reinvestment Act's (CRA) requirement that mortgage lenders provide their regulatory agencies with borrowers' characteristics. For analyses of these requirements, see Bradbury, Case and Dunham (1989) or Holmes and Horvitz (1994).

Whether or not individual financial institutions actually practice discrimination, the effects of anti-discrimination regulation warrant examination. This type of lending bias will presumably result in an inefficient allocation of mortgage funds. While regulators measure a lender's adherence to established standards, the costs and benefits of noncompliance are less apparent. If mortgage lenders fail to adhere to established regulations, costs associated with noncompliance should be reflected in stock prices. This study investigates the impact of regulatory enforcement announcements on lending firms' market values.

If noncompliance brings negative stock returns, regulatory enforcement actions should influence management's loan origination policies. For example, if failure to follow fair-lending guidelines lowers the probability of a favorable ruling by regulators, or reduces the firm's market value, managers should increase their compliance efforts. Increased managerial compliance efforts will likely impact the allocation of loanable funds,

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presumably benefitting minority borrowers. The effect of any such reallocation of loanable funds on profitability is unclear. If compliance costs are high, these are likely to reduce firm profitability and thereby reduce stock prices.

This paper estimates the impact on the stock price performance of mortgage lenders and on other firms in the financial services industry when the Federal Reserve Board denied Shawmut National Corporation's application to acquire New Dartmouth Bank of Manchester, New Hampshire.<sup>2</sup> Negative abnormal returns will indicate that investors believe that lenders have not adhered to fair-lending guidelines and that either the resulting penalties will be significant or compliance will entail significant costs. Variation in the size and significance of abnormal returns associated with the Shawmut denial will reflect both investors' perceptions of the severity of lending discrimination and differences in the costs of achieving compliance with fair-lending guidelines.

The remainder of the paper is organized as follows. Section two introduces specific regulatory actions related to fair-lending and compliance issues. Section three reviews related literature. The fourth section sets forth the methodology and data, and identifies variables likely to affect market valuation. Section five presents the results. Section six concludes the paper.

## The Regulatory Setting

On November 15, 1993, the Federal Reserve Board's regulatory compliance division denied Shawmut's application to acquire New Dartmouth Bank. According to the *American Banker*, "the action was the first denial by the (Federal Reserve) because of concerns about the handling of fair-lending issues by a bank's management."<sup>3</sup> This announcement produced uncertainty among the stock prices of banks involved in residential mortgage lending and those banking organizations that engaged in takeover activities (News Roundup, November 17, 1993).<sup>4</sup>

Announcement of the Federal Reserve decision might impact banking organizations' stock returns in any of several ways. One possibility is that investors would find little relevant information in the application denial. This interpretation by investors may be revealed by the absence of any significant stock price reaction.<sup>5</sup> Such a finding would suggest that for many firms the costs of compliance are low or that the majority of firms already comply with fair-lending guidelines. If lenders are already in compliance with fair-lending guidelines, then the Shawmut denial is likely to be an isolated incident, with small costs to other lenders and relatively little change in lending practices. Given the media attention to the announcement, this result seems unlikely.<sup>6</sup>

Alternatively, investors may regard the denial as signaling increased enforcement of regulations affecting mortgage and consumer loan practices and, at a minimum, increased costs of compliance with equal opportunity guidelines. If lenders are not in compliance with these regulations, the Federal Reserve decision suggests that firms will find that previously available profitable opportunities are no longer permitted. Mortgage and consumer loans will become more available to targeted groups in an effort to comply with fair-lending regulations. Significant negative abnormal returns for residential mortgage and consumer lenders would suggest this interpretation.

Many banking organizations are potentially affected by equal credit opportunity legislation and the Federal Reserve decision.<sup>7</sup> While Federal Reserve responsibility for enforcing fair-lending mandates extends to consumer finance companies, savings and

loans (S&Ls), and other financial institutions, regulatory control varies considerably.<sup>8</sup> The Depository Institutions Deregulation and Monetary Control Act (DIDMCA) requires all state and national banks and S&Ls to maintain reserve deposits with the Federal Reserve. However, the Federal Reserve has direct regulatory control of bank holding companies (BHCs), and national banks must be members of the Federal Reserve System (state banks have no such membership requirement). Thus, while all consumer lenders are subject to Federal Reserve fair-lending enforcement policies, BHCs with national bank subsidiaries are most likely to be impacted by the Federal Reserve announcement.

The 1989 Mortgage Disclosure Act, the CRA of 1977, and the Financial Institutions Reform, Recovery, and Enforcement Act of 1991 (FIRREA) all require the recording and public reporting of consumer mortgage lenders' equal-opportunity lending compliance data.<sup>9</sup> A financial institution's CRA rating is a common indicator of equal-opportunity mandate compliance. Therefore, a low CRA rating (indicating poor compliance) would likely result in a significant negative stock market reaction in the event that the Federal Reserve moved to stricter enforcement of equal opportunity regulations. Thus, an institution's history of fair-lending compliance should influence the impact of the Federal Reserve Board's decision on each firm's stock price.

## Literature Review

Studies of market reactions to announcements of regulation changes in mortgage lenders and other financial institutions are common. Some examples include Eisenbeis, Harris and Lakonishok (1984), who identify significant and positive abnormal returns when one-bank holding companies are formed.<sup>10</sup> Black, Fields and Schweitzer (1990) find that legislation that provides increased opportunities for interstate expansion has a positive impact on regional bank stock prices. Money center banks did not immediately benefit from the legislative changes and were found to have negative returns. Billingsley and Lamy (1992) find positive stock price reactions to the Supreme Court's ruling in 1985 confirming the legality of regional reciprocal interstate banking pacts. Each of the studies presents evidence that supports the hypothesis that a financial institution's opportunity to diversify is valuable.

Cooper, Kolari and Wagster (1991) find generally negative stock returns for large international banks in the U.S., Canada, the U.K., and Japan when the 1988 Basle Accord was adopted.<sup>11</sup> The Basle Accord "was intended to raise the capital bases of banks actively operating across national borders . . ." (Cooper et al., p. 367). This agreement presumably reduces the profitability of international banking organizations which are expected to reduce their asset portfolio risk or to increase their capital base. In either case, these banks' lending opportunities will be curtailed.

Several recent studies relate directly to the Shawmut ruling in that they examine the market response among financial institutions following congressional legislation passage. These acts and studies include:

- (1) the Depository Institutions Act of 1982,<sup>12</sup> which is examined by Fraser and Kolari (1990), Millon-Cornett and Tehranian (1990), and Fraser, Richards and Fosberg (1985). Fraser and Kolari find positive and significant returns for S&Ls prior to the Act's passage. Millon-Cornett and Tehranian find positive returns for owners of

*large* S&Ls and commercial banks, while owners of *small* S&Ls and commercial banks generally experienced negative returns. Fraser, Richards and Fosberg find that S&L deposit rate deregulation had significant negative effects on stock prices of regional, regional wholesale and regional retail banks, while money center banks were not affected.

- (2) effects of DIDMCA on stock prices, which are examined by Allen and Wilhelm (1988), Aharony, Saunders and Swary (1988), and Millon-Cornett and Tehranian (1989). These studies find considerable evidence of differences across types of financial institutions in both the size and direction of stock price movements associated with passage of DIDMCA.
- (3) the impact of FIRREA on stock prices, which is studied by Sundaram, Rangan and Davidson (1992) who find positive returns for both banks and S&Ls. Madura, Tucker and Zarruk (1993) find positive returns for S&Ls, but only a negligible effect on commercial bank stock prices.

These articles relate to the current study in two important ways. First, they examine the market reaction to regulatory actions, as does this work. Second, they find differences in the response of various types and sizes of financial institutions to regulatory change. Examining the impact of a change in the willingness of regulators to base acquisition approval on the applicant's fair-lending compliance record is a logical extension of the literature.

## Model and Data

As discussed above, effects of regulatory and legislative changes on stock prices have been shown to vary according to the type and size of lending institution. Investors have better access to a variety of information about large firms, which likely includes their fair-lending records. Generally, less information is available about smaller financial institutions, so investors may not know about their equal-opportunity compliance history. Thus, smaller banks' stock price reaction to the Shawmut denial will probably be less than large firms' stock price changes. Differences in the regulatory environment, as discussed in section two of this paper, are also likely to impact responses to the Federal Reserve decision. The effects of Federal Reserve denial of Shawmut's application should vary with firm type and size. Discussion of other variables expected to be correlated with stock price reactions to the Federal Reserve decision follows.

A firm's history of merger activity is likely to be positively correlated with that firm's future involvement in merger and acquisition activities. Stricter Federal Reserve verification of equal opportunity regulation compliance appears to be a requirement for takeover approval. Past approval may serve as indirect validation of the lender's compliance record. Should an institution decide to become involved in additional takeover activities, subsequent approvals would seem more likely given a record of merger application approval. Firms interested in subsequent mergers allegedly will find the application process easier because the Federal Reserve has already verified their fair-lending compliance. These financial institutions should be less affected by the Federal Reserve compliance decision.<sup>13</sup>

As noted above, Federal Reserve denial of Shawmut's application was based on

Shawmut's failure to comply with fair-lending guidelines; therefore, an institution's fair-lending performance record is expected to influence the impact of the decision on stock prices. Firms with weak records of compliance may find that regulatory examinations will become more onerous, and these firms will be less likely to find the Federal Reserve willing to approve applications. Such firms are expected to experience larger negative stock price reactions to the Shawmut decision than are firms with strong compliance records.

Finally, the number of opportunities available to the Federal Reserve to evaluate a firm's compliance efforts will increase with the number of actions currently under review by the Federal Reserve. At the time of the Shawmut ruling, several merger applications were in earlier stages of review. The denial decision would likely be associated with a negative reaction among those firms with pending applications. As a result, the impact of the Federal Reserve decision on stock prices is expected to increase with the number of applications pending at the Federal Reserve.

Standard event study methodology is used to measure abnormal returns surrounding the November 15, 1993 Federal Reserve decision. Three other related dates are also examined. Exhibit 1 provides the primary and secondary event dates and several other relevant events.

### Exhibit 1 Examined Event Dates

Date	Publication	Event
10/9/93	AB	Article states that lending bias probe is clouding Shawmut's pending acquisitions
10/22/93	AB	Shawmut listed as one of banks being probed by Justice Department for lending bias
11/15/93		Federal Reserve votes 3-3 on Shawmut's acquisition of New Dartmouth Bank (thus not approved)
12/14/93	AB	Shawmut settles Justice Department suit for \$1M
(Other dates of possible interest, but not examined)		
1/22/93	AB	Shawmut announces commitment of \$50M to a minority lending program
2/26/93	AB	Investigators obtain lending bias data from Shawmut
3/10/93	AB	Shawmut confirms that it is subject of lending bias probe by the Justice Department
11/17/93	WSJ, AB	Articles provide analysis of Federal Reserve's surprising "get tough" policy in turning down Shawmut's application
1/10/94	AB	Federal Reserve agrees to give Shawmut more time to seek rehearing to acquire New Dartmouth Bank
3/9/94	WSJ	Shawmut announces agreement to acquire West Newton Savings Bank
4/29/94	WSJ	Federal Reserve clears application to acquire New Dartmouth Bank (reversing earlier course)

AB=*American Banker*; WSJ=*Wall Street Journal*.

The following standard event study model is estimated:<sup>14</sup>

$$R_{jt} = \alpha_j + \beta_{1j}(R_{mt}) + e_{jt} . \quad (1)$$

The expected daily return for each security is computed by observing market behavior for 1992. This regression of security and market returns is used to estimate  $\alpha_j$  and  $\beta_{1j}$ .

The Brown and Warner (1985) procedure is used to analyze the effects of the Federal Reserve denial of Shawmut's merger application by examining the daily abnormal returns and cumulative abnormal returns (*CAR*) surrounding the four events listed in Exhibit 1.<sup>15</sup> The Dodd and Warner (1983) method is used to calculate the standardized abnormal returns and *Z*-statistics. Abnormal changes in stock prices would suggest that the four events altered investor expectations about the stock prices of banking organizations.<sup>16</sup>

Next, the following model is used to examine the influence of the Federal Reserve announcement and other factors on *CARs*:

$$CAR_{jt} = \alpha_j + \beta_{1j}(EOCR_i) + \beta_{2j}(FED_i) + \beta_{3j}(MERGE_i) + \beta_{4j}(TA_i) + e_{jt} . \quad (2)$$

Since the Equal Opportunity Credit Rating for each mortgage lender ( $EOCR_i$ ) is a qualitative variable, such as "satisfactory" or "outstanding," the "Black-to-White rejection ratio," which has been reported in the popular press and cited as evidence of compliance with equal-lending opportunity guidelines by mortgage lenders, has been used as a proxy for each firm's *EOCR*.<sup>17</sup> In addition, the 1989 Home Mortgage Disclosure Act requires lenders to file their Black-to-White rejection ratio with federal regulators. The model alternately includes 1991 values ( $EOCR_{91}$ ) and 1992 values ( $EOCR_{92}$ ) for each firm.<sup>18</sup>  $\beta_{1j}$  is expected to be negative since the Federal Reserve announcement is expected to reduce the number of merger opportunities available to lenders with poor fair-lending compliance records.

For each BHC, the variable  $FED_i$  represents the number of acquisition (or other) applications pending before the Federal Reserve around the time of the Shawmut decision.<sup>19</sup> These data are found in the *Federal Reserve Bulletin's* "Legal Developments" section for the six months ( $FED_{06}$ ) and twelve months ( $FED_{12}$ ) following the Shawmut decision.  $FED_{06}$  and  $FED_{12}$  should indicate the number of examinations of lending policies that could be affected by the change in enforcement policy. The coefficient  $\beta_{2j}$  is expected to be negative because the Shawmut decision is likely to affect adversely those lenders that are currently under regulatory scrutiny.

$MERGE_i$  is a dummy variable measuring merger activity. The variable is considered under two scenarios. First, the variable  $MERGE_{05}$  has a value of 1 only if the lender has consummated five or more mergers or acquisitions in the preceding five years. The model is run again with the variable  $MERGE_{10}$ , with a value of 1 if the lender has had ten or more mergers or acquisitions within the past ten years.<sup>20</sup> A negative value of  $\beta_{3j}$  would verify that those lenders involved in merger activities will be most affected by the new approach to enforcement. A positive value for  $\beta_{3j}$  would imply that investors believe that those lenders who have previously survived a Federal Reserve compliance audit would likely be approved.

$TA_i$ , the natural logarithm of each lender's 1992 total assets<sup>21</sup> (as found in *Compact Disclosure*) is included as a proxy for firm size.  $\beta_{4j}$  is expected to be positive because investors should have less uncertainty about the fair-lending compliance of larger and better known financial institutions.

Equation (1) is estimated for those financial institutions (or appropriate subsidiary) for which data are available in both Karr (1993) and the *Media General* daily prices file. Subgroups include the financial institution subsidiaries of manufacturing firms,<sup>22</sup> thrifts (SIC 6035), or BHCs (SIC 6712). BHCs are further segmented by these three classifications: state banks (SIC 6021), national banks (SIC 6022), or dual (SIC codes 6021 and 6022).

As discussed above, expected stock market reaction to the Shawmut decision will be most negative for those lenders under the direct control and supervision of the Federal Reserve. Thus, BHCs with national bank subsidiaries will be the ones most likely to experience significant and negative stock market responses.

Karr (1993) examines 786 separate financial institutions or subsidiaries. In the current analysis, 255 of the subsidiary lenders could not be positively associated with a parent firm.<sup>23</sup> There are 201 distinct parent organizations; no ticker symbol match was found for 19. A total of 45 firms are either no longer listed (having been acquired) or otherwise not found in the *Media General* files. The final sample size for estimation using model (2) is 137.<sup>24</sup> Exhibit 2 presents descriptive data for the entire sample and the various subgroups. The number of firms in the subgroups ranges from nine (Finance companies) to eighty-two (BHCs). Mean total assets range from \$4.95B (for BHCs that own state banks) to \$39.70B (manufacturing firms with financial institutions).

## Results

Exhibit 3 contains the event study results based on equation (1). These results are presented for the entire sample and for each of the subgroups. The negative excess return on the compliance decision announcement date (November 15, 1993) for the entire group of Bank Holding Companies (significant at the .01 level) and for each of the subcategories (significant at the .10 level or better) is important to note. Also noteworthy is the negative cumulative excess return when all firms in the study group are considered (significant at the .01 level), for the entire group of BHCs (significant at the .05 level), and for each of the individual bank categories.

**Exhibit 2**  
**Descriptive Statistics<sup>1</sup>**

Firm Type	N	Mean Total Assets	Minimum Total Assets	Maximum Total Assets
BHCs	82	\$24.738B	\$.227B	\$213.701B
National	20	21.835B	.351B	118.059B
State	15	4.950B	.227B	40.910B
Dual <sup>2</sup>	47	32.288B	.706B	213.701B
S&L	27	6.430B	.144B	48.141B
Finance Co.	9	21.269B	.164B	149.118B
Manufacturing	19	39.705B	.049B	192.876B
All Data	137	\$22.977B	\$.049B	\$213.701B

<sup>1</sup>1992 data

<sup>2</sup>"Dual" refers to BHCs with both state and national bank subsidiaries.

**Exhibit 3**  
**Results of Event Study: Daily Abnormal Returns and**  
**Three-Day Cumulative Abnormal Returns<sup>1</sup>**

(using the Model:  $R_{jt} = \alpha_j + \beta_1 j(R_{mt}) + e_{jt}$ )

Institutions	Date			
	Nov 12	Nov 15	Nov 16	CAR
BHC-National Banks	.0010 (.26)	-.0080 (-1.95*)	.0030 (.85)	-.0040 (-.73)
BHC-State Banks	.0026 (.37)	-.0123 (-3.01***)	.0036 (.65)	-.0061 (-.69)
BHC-Dual <sup>2</sup>	.0003 (.15)	-.0057 (-2.56***)	-.0012 (-.59)	-.0066 (-1.97*)
BHC-All	.0009 (.45)	-.0075 (-4.18***)	.0007 (.39)	-.0059 (-2.09**)
S&L	-.0013 (-.32)	-.0071 (-2.39**)	-.0018 (-.45)	-.0102 (-2.30**)
Finance Co.	-.0071 (.72)	.0025 (.22)	-.0118 (-1.55)	-.0021 (-.14)
Manufacturing Co.	.0081 (1.90*)	-.0020 (-.49)	.0101 (1.90*)	.0163 (1.69)
All Firms	.0019 (1.11)	-.0060 (-3.90***)	.0007 (1.43)	-.0034 (-1.32)

<sup>1</sup>t-statistics are in parentheses.

<sup>2</sup>"Dual" refers to BHCs with both state and national bank subsidiaries.

\*, \*\*, \*\*\* indicate that the coefficient estimate is significant at the  $\alpha = .1$ ,  $\alpha = .05$ ,  $\alpha = .01$  level of significance.

We find it interesting that the group of S&Ls also has an event day and cumulative abnormal return that is negative and significant at the .05 level. The two remaining groups ("Other" Financial Institutions and Manufacturing Companies with Financial Institution Subsidiaries) have mixed excess and cumulative excess returns results that might be attributed to the small number of firms included in these categories.<sup>25</sup>

Exhibit 4 reports the results based on equation (2) for the announcement date, November 15, 1993. Panel A reports the findings of the analysis using 1991 fair-lending data while Panel B reports the results using 1992 fair-lending data. The CARs of BHCs with only national bank subsidiaries are significantly negatively related to their 1991 fair-lending compliance proxy. Thus, the announcement affected most those lenders over which the Federal Reserve has the most extensive regulatory oversight. The positive, significant coefficient of *MERGE05* for BHCs with only national bank subsidiaries implies that investors believe that recent merger activity verifies the BHCs' compliance with equal-opportunity lending mandates and suggests approval of subsequent acquisitions is likely.<sup>26</sup> Significance of other coefficient estimates is scattered and limited. So, while it appears that the stock prices of firms in several sectors of the financial services industry were affected adversely by the Federal Reserve Shawmut decision, there may be factors not yet identified that play a role in determining the strength of the stock market response to the announcement.



**Exhibit 4**  
**Regression Results from the Following General Model**  
**and the Event Date of November 15, 1994:**

$$CAR_{it} = \alpha_j + \beta_{1j}(EOCR_i) + \beta_{2j}(FED_i) + \beta_{3j}(MRGR_i) + \beta_{4j}(\ln TA_i) + e_{it}$$

**Panel A<sup>1</sup>**

	<i>Alpha</i>	<i>EOCR91</i>	<i>MERGE05</i>	<i>FED06</i>	<i>ln TA</i>
BHC-National (N=20, $R^2=.32$ )	.0439 (.0620)	-.0118** (.0053)	.0255* (.0130)	-.0019 (.0033)	-.0014 (.0043)
BHC-State (N=15, $R^2=.35$ )	-.3189* (.1568)	-.0010 (.0068)	-.0054 (.0209)	-.0215 (.0143)	.0225* (.0116)
BHC-Dual <sup>2</sup> (N=47, $R^2=.12$ )	.0282 (.0465)	-.0002 (.0022)	-.0095 (.0070)	-.0009 (.0007)	-.0015 (.0028)
BHC-All (N=82, $R^2=.05$ )	-.0160 (.0310)	.0002 (.0019)	-.0047 (.0061)	-.0011 (.0008)	.0009 (.0020)
S&L (N=27, $R^2=.07$ )	-.0668 (.0545)	-.0002 (.0022)	-.0193 (.0157)	NA	.0041 (.0037)
Finance Co. (N=9, $R^2=.17$ )	.0167 (.1367)	.0103 (.0106)	NA	NA	-.0002 (.0088)
Manufacturing (N=19, $R^2=.003$ )	.0183 (.0688)	.0014 (.0070)	NA	NA	-.0002 (.0044)
All (N=137, $R^2=.04$ )	-.0150 (.0239)	-.0004 (.0015)	-.0081 (.0063)	-.0011 (.0009)	.0011 (.0015)

**Panel B**

	<i>Alpha</i>	<i>EOCR92</i>	<i>MERGE05</i>	<i>FED06</i>	<i>ln TA</i>
BHC-National (N=20, $R^2=.13$ )	.0609 (.0696)	-.0035 (.0044)	.0120 (.0132)	-.0005 (.0046)	-.0038 (.0046)
BHC-State (N=15, $R^2=.36$ )	-.3030* (.1335)	.0020 (.0055)	-.0073 (.0195)	-.0212 (.0136)	.0209* (.0095)
BHC-Dual (N=47, $R^2=.12$ )	.0249 (.0482)	.0002 (.0014)	-.0092 (.0071)	-.0009 (.0007)	-.0014 (.0028)
BHC-All (N=82, $R^2=.05$ )	-1.0174 (.0312)	.0005 (.0013)	-.0045 (.0060)	-.0012 (.0008)	.0009 (.0020)
S&L (N=27, $R^2=.07$ )	-.0682 (.0533)	.0003 (.0013)	-.0189 (.0154)	NA	.0041 (.0037)
Finance Co. (N=9, $R^2=.04$ )	.0665 (.1371)	-.0012 (.0223)	NA	NA	-.0044 (.0101)
Manufacturing (N=19, $R^2=.13$ )	-.0048 (.0662)	.0137 (.0090)	NA	NA	-.0007 (.0041)
All (N=137, $R^2=.04$ )	-.0167 (.0238)	.0004 (.0011)	-.0081 (.0063)	-.0011 (.0009)	.0010 (.0015)

<sup>1</sup>Standard errors appear in parentheses below each coefficient estimate.

<sup>2</sup>"Dual" refers to BHCs with both state and national bank subsidiaries.

\*, \*\* indicate the coefficient estimate is significant at the  $\alpha=.1$ ,  $\alpha=.05$  level.

Equation 2 reveals no significant relationships between CARs and independent variables for BHCs with both state bank subsidiaries and national bank subsidiaries. However, as expected, both *EOCR* and *FED* have negative signs. The CARs of the remaining financial institutions—S&Ls, finance companies, and manufacturing firms with mortgage lending subsidiaries—show no significant relation to these variables. There is also no significant relationship between CARs and these variables when the entire dataset is examined.

The results from equation 2 for BHCs that own only state banks are also of interest. The significant and negative intercept means that these banks' CARs show an overall negative reaction to the Federal Reserve decision. This reaction is mitigated by firm size, as shown by the significantly positive coefficient for the natural log of total assets ( $\ln TA$ ).

## Concluding Remarks and Summary

This analysis finds that the stock returns of many mortgage lending organizations reacted negatively to the Federal Reserve denial of Shawmut National Corporation's acquisition request. For the first time, a denial decision was based on the failure of a mortgage lender to comply adequately with federal fair-lending mandates. There is a significant negative excess return on the decision announcement date and a significant three-day cumulative abnormal return among all bank holding companies. This decision and associated market reaction reveal much about the importance of new directions in equal-opportunity lending compliance enforcement to investors and lenders.

Cross-sectional analysis of the relationship between the CAR and measures of fair-lending compliance, the number of pending requests, and the number of previously approved merger applications are all significantly correlated with investor (and stockholder) reaction to the Shawmut merger application denial. In both the event study and cross-sectional analyses, the strongest reaction was among the Bank Holding Companies and, in particular, those BHCs with national bank subsidiaries.

The results reported here identify a stock market response to a Federal Reserve regulatory action. If these results may be generalized to other regulatory and legislative actions, they suggest that changes in regulation of financial services firms is likely to have a significant impact on their stock price performance. While it is difficult, if not impossible, to predict the outcome of efforts to increase or decrease regulation of financial services, changes in both the enforcement of existing regulations and in the regulations themselves warrant the attention of investors.

## Notes

<sup>1</sup>The 1989 Mortgage Disclosure Act, the Community Reinvestment Act of 1977, and the Financial Institutions Reform, Recovery, and Enforcement Act of 1991 all regulate consumer mortgage lending practices.

<sup>2</sup>The Federal Reserve Board of Governors voted 3–3 with one abstention on the matter. As such, Shawmut's request could more accurately be described as "not approved."

<sup>3</sup>Cummins (1993), p. 3.

<sup>4</sup>The Cummins (1993) article includes this quotation from an unidentified industry source: "The rules have changed. The bar has been raised, but nobody knows how high." Also, from the *Wall*

*Street Journal* (News Roundup, 1993) there is this quotation regarding acquisition planning following the Federal Reserve's ruling: "You can plan for anything, if you know what the rules are. It's when you don't know what the rules are that makes it so difficult."

<sup>5</sup>It is possible that the Federal Reserve's announcement could alter the variance of stock price returns along with or instead of the returns themselves. That issue is beyond the scope of this paper.

<sup>6</sup>However, statistically insignificant reactions are possible if the economic effects from the Federal Reserve's decision are expected to be small relative to current market values.

<sup>7</sup>Fair-lending data are available only for home mortgage and home equity loans on a nationwide basis. Thus, while all consumer lenders may be appropriate subjects, only consumer mortgage lenders are examined.

<sup>8</sup>Credit unions are currently exempt from the CRA (Lacker, 1995). In addition, while credit unions may be affected by the Federal Reserve's decision these institutions have no publicly traded stock; therefore, credit unions are excluded from the study.

<sup>9</sup>No such uniform requirements exist for other consumer credit providers although Congress is in the preliminary stages of considering such legislation.

<sup>10</sup>At the time of the announcements under study, one-bank holding companies had greater opportunities to diversify geographically and increase their product offers than did multi-bank holding companies.

<sup>11</sup>The Basle Accord provided for adoption of risk-based capital requirements by banks in twelve leading Western industrialized countries.

<sup>12</sup>The Depository Institutions Act of 1982, which is often referred to as the Garn-St Germain Act or the Garn Bill, reduced restrictions on S&Ls' loan portfolios and permitted S&Ls and commercial banks to offer deposit instruments competitive with money market mutual funds.

<sup>13</sup>A bank that is regarded as obtaining its strength and growth through acquisitions can meet with stock market skepticism if it is forced to abandon that strategy. A case in point is the reaction to Banc One's announcement (February 1994) that it is not going to go through with a stock transaction to acquire FirstTier Financial Inc. of Nebraska. This announcement signals the end of Banc One's acquisition policy and has produced "jitters among some investors" (Stern and Pulliam, 1994).

<sup>14</sup>Where  $R_{jt}$  is the rate of return on stock  $j$  over period  $t$ ;  $R_{mt}$  is the return on the market portfolio for period  $t$  proxied by the CRSP value-weighted returns index;  $\alpha_j$  is the intercept term for firm  $j$ ;  $\beta_{1j}$  is the slope measuring systematic risk sensitivity for firm  $j$ ; and  $e_{jt}$  is the unsystematic component of firm  $j$ 's return for period  $t$  (the usual ordinary least squares assumptions are assumed to hold).

<sup>15</sup>Only the results of the reaction to the November 15, 1993 announcement are presented. Results for the other dates are available upon request.

<sup>16</sup>This study incorporates several alternate statistical methods for *beta* estimation in analysis involving a common event date. For a detailed discussion of an appropriate approach for this type of analysis, see Henderson (1990) or Shelor and Cross (1994).

<sup>17</sup>See, for example, Karr (1993) and Bacon (1994).

<sup>18</sup>Data from 1992 were not reported in the same format as the 1991 data until after the Federal Reserve had announced its Shawmut decision.

<sup>19</sup>Other applications pending before the Federal Reserve might include bank expansions, new branches, or relocations.

<sup>20</sup>Merger and acquisition histories are obtained from Moody's *Banking and Finance Manual*. Only the results from MERGE05 are reported. The number of mergers and acquisitions in which each firm was involved during the preceding ten-year period was also used and obtained results that are similar to those reported here. The choice to report the results for the models including the dummy variable MERGE05 is intended to focus on the impact of the Federal Reserve ruling on firms known to be actively involved in mergers and acquisitions.

<sup>21</sup>The natural logarithm of firm's assets reduces size-related heteroskedasticity and provides a reasonable measure of each firm's scale of operations. Similar results are found when the model is estimated using total assets in place of the log of assets.

<sup>22</sup>Given that many of the banking organizations reported by Karr are subsidiaries of industrial firms, the authors identify the industry classification of the parent corporations. Finance subsidiaries of predominantly non-financial firms are included in Karr (1993). However, it is doubtful that the Federal Reserve's decision will have much impact on the stock price of firms such as Ford, General Electric, or Sears. Also, there are no data for these firms for the *MERGE* and *FED* variables.

<sup>23</sup>There are 209 distinct firms in the 255 observations.

<sup>24</sup>The exact number of firms used in estimating equation 2 differs based on the proxies used for each variable. The number of observations for each regression is reported below each category in Exhibit 4.

<sup>25</sup>Cumulative abnormal returns and excess returns for the event analyses of the other relevant dates in the Shawmut case are mixed and/or insignificant and are not reported here. The results for the event dates not reported here are available from the authors upon request.

<sup>26</sup>Another interpretation of the result is that the Federal Reserve's decision will slow down future acquisitions. Past studies of bank mergers have generally found that acquiring banks earn negative, but not significant, abnormal returns. See Cornett and De (1991), Desai and Stover (1985), James and Wier (1987), and Trifts and Scanlon (1986) for representative work on this topic.

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